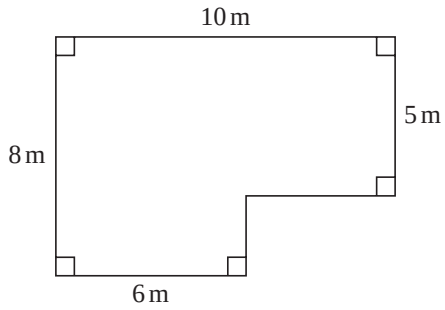
Question 1

Non-calculator • 5 marks

The diagram shows a plan of a floor.



Petra is going to cover the floor with paint.

Petra has 3 tins of paint.
There are 2.5 litres of paint in each tin.

Petra thinks 1 litre of paint will cover $10\,m^2$ of floor.

(a) Assuming Petra is correct, does she have enough paint to cover the floor?
You must show all your working.

(4)

Source: Pearson Edexcel GCSE Mathematics, June 2024, 1MA1/1H, Question 3.

Question 1 (continued)

Non-calculator • 5 marks

Actually, 1 litre of paint will cover $11\,m^2$ of floor.

(b) Does this affect your answer to part (a)?
You must give a reason for your answer.

.....

.....

.....

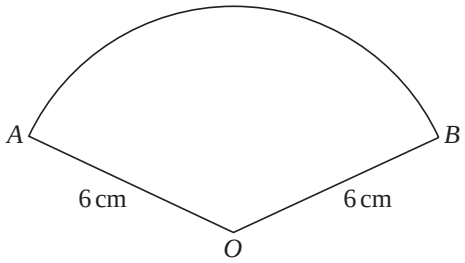
(1)

Source: Pearson Edexcel GCSE Mathematics, June 2024, 1MA1/1H, Question 3.

Question 2

Non-calculator • 4 marks

OAB is a sector of a circle with centre *O* and radius 6 cm.



The length of the arc *AB* is 5π cm.

Work out, in terms of π, the area of the sector.
Give your answer in its simplest form.

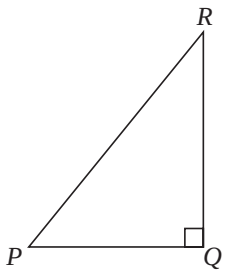
..... cm^2

Source: Pearson Edexcel GCSE Mathematics, June 2024, 1MA1/1H, Question 15.

Question 3

Calculator allowed • 3 marks

A playground is in the shape of a right-angled triangle.



Dan makes a scale drawing of the playground.
He uses a scale of 1 cm represents 5 m

The area of the playground on the scale drawing is 28 cm^2

The real length of QR is 40 m

Work out the real length of PQ.

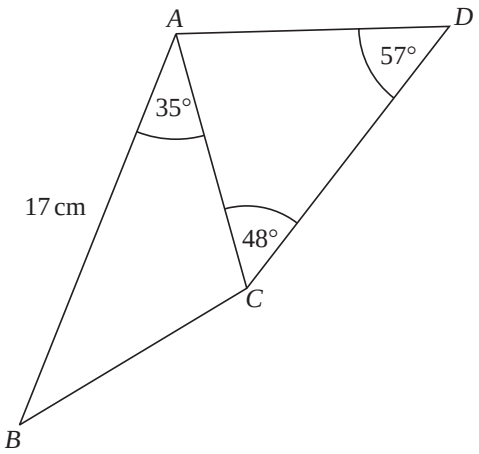
..... m

Source: Pearson Edexcel GCSE Mathematics, June 2024, 1MA1/2H, Question 8.

Question 4

Calculator allowed • 5 marks

ABCD is a quadrilateral.



The area of triangle *ABC* is $54\,\text{cm}^2$

Calculate the area of triangle *ACD*.
Give your answer correct to 3 significant figures.

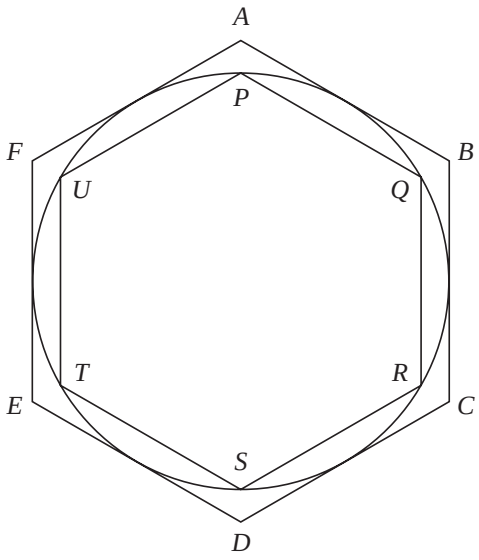
cm^2

Source: Pearson Edexcel GCSE Mathematics, June 2024, 1MA1/3H, Question 18.

Question 5

Calculator allowed • 4 marks

The diagram shows a circle, radius r cm and two regular hexagons.



Each side of the larger hexagon *ABCDEF* is a tangent to the circle.
Each side of the smaller hexagon *PQRSTU* is a chord of the circle.

By considering perimeters, show that

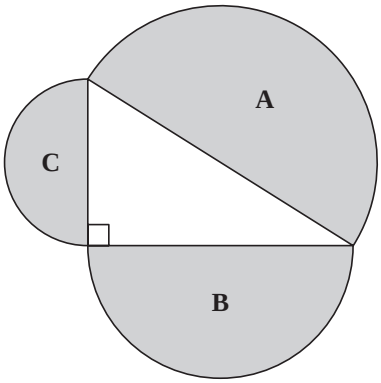
$$3 < \pi < 2\sqrt{3}$$

Source: Pearson Edexcel GCSE Mathematics, June 2024, 1MA1/3H, Question 21.

Question 6

Non-calculator • 3 marks

A right-angled triangle is formed by the diameters of three semicircular regions, **A**, **B** and **C** as shown in the diagram.



Show that

area of region **A** = area of region **B** + area of region **C**

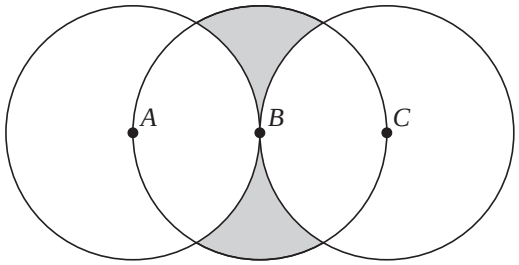
Source: Pearson Edexcel GCSE Mathematics, June 2022, 1MA1/1H, Question 13.

Question 7

Non-calculator • 5 marks

The diagram shows three circles, each of radius 4 cm.

The centres of the circles are A, B and C such that ABC is a straight line and $AB = BC = 4$ cm.



Work out the total area of the two shaded regions.
Give your answer in terms of π

..... cm^2

Source: Pearson Edexcel GCSE Mathematics, June 2022, 1MA1/1H, Question 21.

Question 8

Non-calculator • 3 marks

The circumference of a circle is 10 m.

Work out the area of the circle.
Give your answer in terms of π.

..... m^2

Source: Pearson Edexcel GCSE Mathematics, Nov 2023, 1MA1/1H, Question 10.

Question 9

Calculator allowed • 5 marks

Festival A will be in a rectangular field with an area of 80 000 m^2
The greatest number of people allowed to attend Festival A is 425

Festival B will be in a rectangular field 700 m by 2000 m.
The greatest number of people allowed to attend Festival B is 6750

The area per person allowed for Festival B is greater than the area per person allowed for Festival A.

(a) How much greater?
Give your answer correct to the nearest whole number.

..... m^2

(4)

Callum says,

"300 cm^2 is the same as 3 m^2 because there are 100 cm in 1 m so you divide by 100"

Callum's method is wrong.

(b) Explain why.

.....

.....

.....

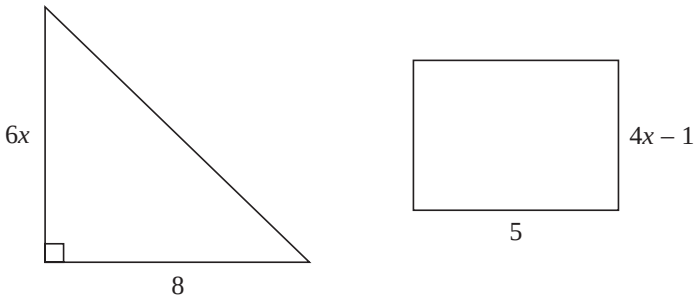
(1)

Source: Pearson Edexcel GCSE Mathematics, June 2022, 1MA1/2H, Question 4.

Question 10

Calculator allowed • 4 marks

Here is a triangle and a rectangle.



All measurements are in centimetres.

The area of the triangle is $10\,\text{cm}^2$ greater than the area of the rectangle.

Work out the value of x.

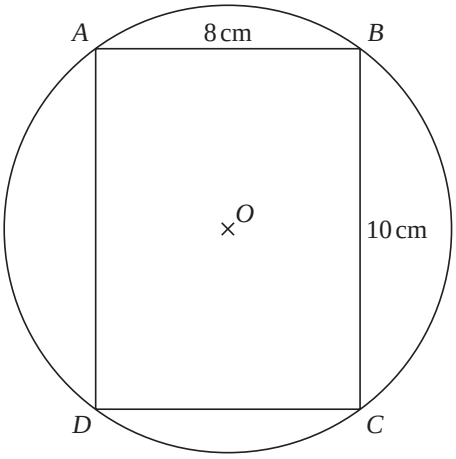
$x =$ .....

Source: Pearson Edexcel GCSE Mathematics, June 2023, 1MA1/2H, Question 5.

Question 11

Calculator allowed • 4 marks

The points *A*, *B*, *C* and *D* lie on a circle, centre *O*.
ABCD is a rectangle.



AB = 8 cm *BC* = 10 cm

Work out the circumference of the circle.
Give your answer correct to 3 significant figures.

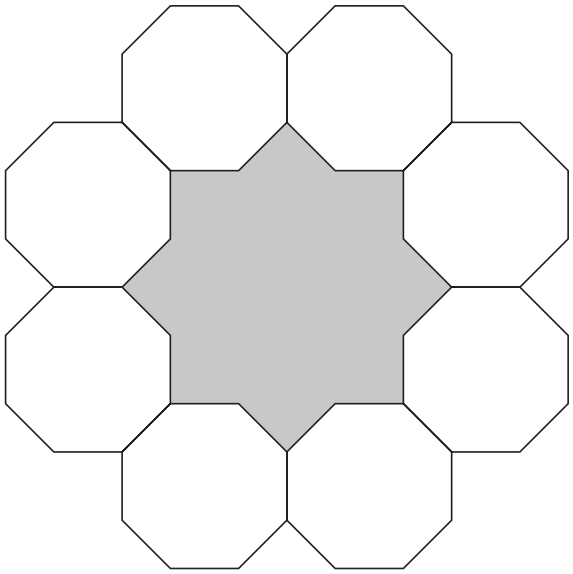
..... cm

Source: Pearson Edexcel GCSE Mathematics, June 2023, 1MA1/2H, Question 12.

Question 12

Calculator allowed • 5 marks

The diagram shows 8 identical regular octagons joined to enclose a shaded shape.



Each octagon has sides of length a.

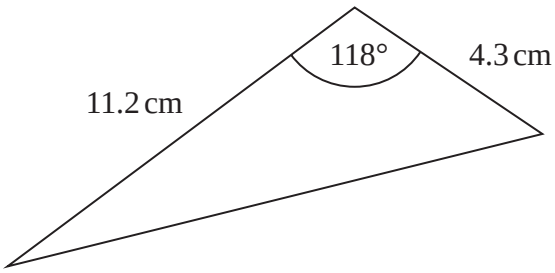
Find, in terms of a, an expression for the area of the shaded shape.
Give your answer in the form $p\left(2+\sqrt{2}\right)a^2$ where p is an integer.
You must show all your working.

Source: Pearson Edexcel GCSE Mathematics, June 2023, 1MA1/2H, Question 24.

Question 13

Calculator allowed • 2 marks

Here is a triangle.



Work out the area of the triangle.
Give your answer correct to 3 significant figures.

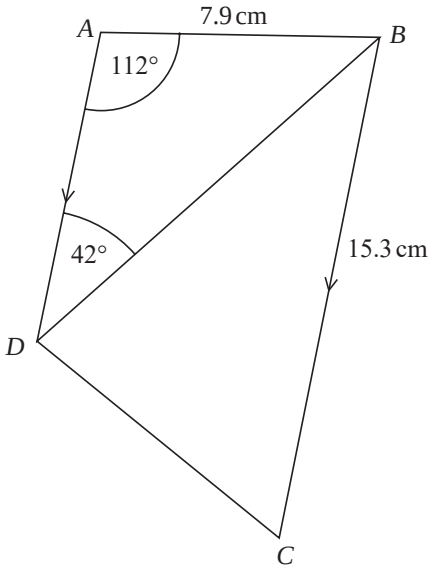
..... cm^2

Source: Pearson Edexcel GCSE Mathematics, Nov 2022, 1MA1/2H, Question 18.

Question 14

Calculator allowed • 4 marks

ABCD is a trapezium.



AD is parallel to *BC*.

Calculate the area of triangle *BCD*.
Give your answer correct to 1 decimal place.

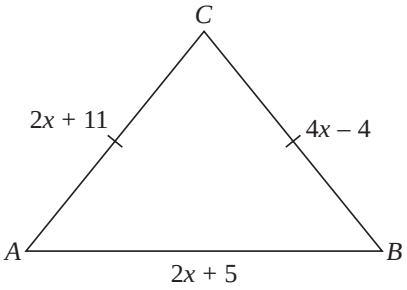
..... cm^2

Source: Pearson Edexcel GCSE Mathematics, Nov 2023, 1MA1/2H, Question 16.

Question 15

Calculator allowed • 5 marks

The diagram shows triangle ABC.



In the diagram, all measurements are in centimetres.

$AC = BC$

The perimeter of the triangle is 72 cm.

Work out the area of the triangle.

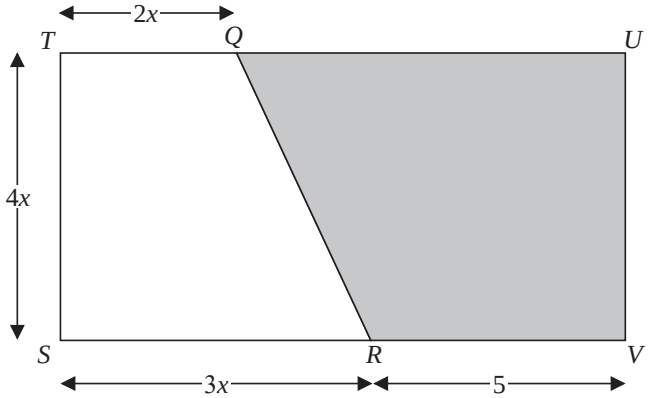
cm^2

Source: Pearson Edexcel GCSE Mathematics, Nov 2024, 1MA1/2H, Question 7.

Question 16

Calculator allowed • 3 marks

The diagram shows rectangle *STUV*.
TQU and *SRV* are straight lines.
All measurements are in cm.



The area of trapezium *QUVR* is $A\,\text{cm}^2$

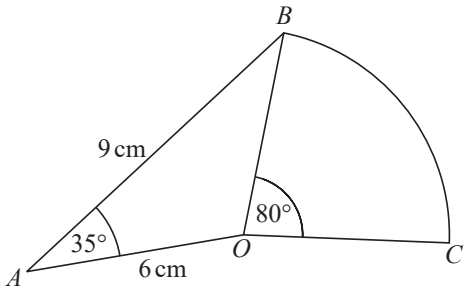
Show that $A = 2x^2 + 20x$

Source: Pearson Edexcel GCSE Mathematics, June 2022, 1MA1/3H, Question 7.

Question 17

Calculator allowed • 4 marks

OAB is a triangle.
OBC is a sector of a circle, centre *O*.



Calculate the area of *OBC*.
Give your answer correct to 3 significant figures.

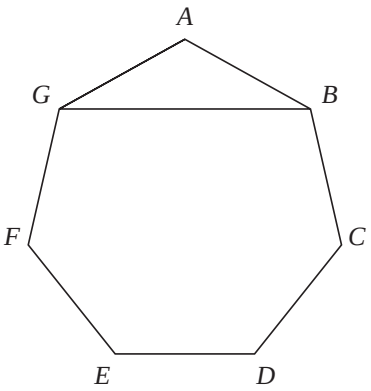
cm^2

Source: Pearson Edexcel GCSE Mathematics, June 2023, 1MA1/3H, Question 14.

Question 18

Calculator allowed • 5 marks

ABCDEFG is a regular heptagon.



The area of triangle *ABG* is $30\,cm^2$

Calculate the length of *GB*.
Give your answer correct to 3 significant figures.
You must show all your working.

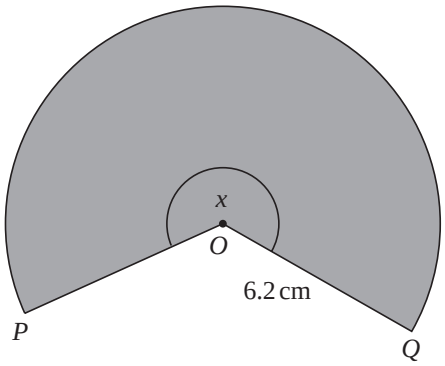
..... cm

Source: Pearson Edexcel GCSE Mathematics, Nov 2022, 1MA1/3H, Question 26.

Question 19

Calculator allowed • 2 marks

The diagram shows a shaded sector POQ of a circle with centre O and radius 6.2 cm.



The area of the shaded sector is 82.6 cm^2

Calculate the size of angle x.
Give your answer correct to 3 significant figures.

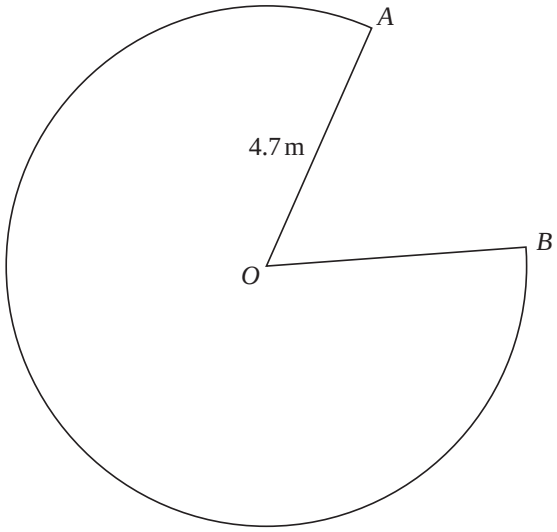
.....°

Source: Pearson Edexcel GCSE Mathematics, Nov 2023, 1MA1/3H, Question 12.

Question 20

Calculator allowed • 3 marks

OAB is a sector of a circle with centre *O* and radius 4.7 m.



The sector has a perimeter of 34.3 m.

Find the size of the reflex angle *AOB*.
Give your answer correct to the nearest degree.

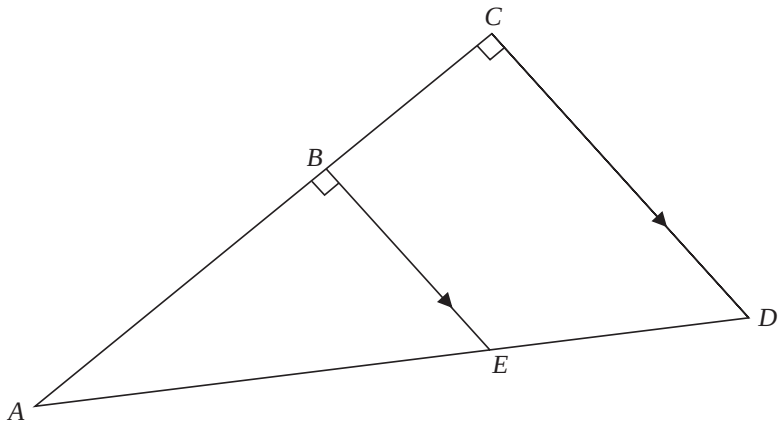
.....°

Source: Pearson Edexcel GCSE Mathematics, Nov 2024, 1MA1/3H, Question 11.

Question 21

Calculator allowed • 3 marks

ABC and *AED* are straight lines.
BE and *CD* are parallel.



BE = 4.2 cm
CD = 6.3 cm
AC = 10.8 cm

Work out the area of trapezium *BCDE*.

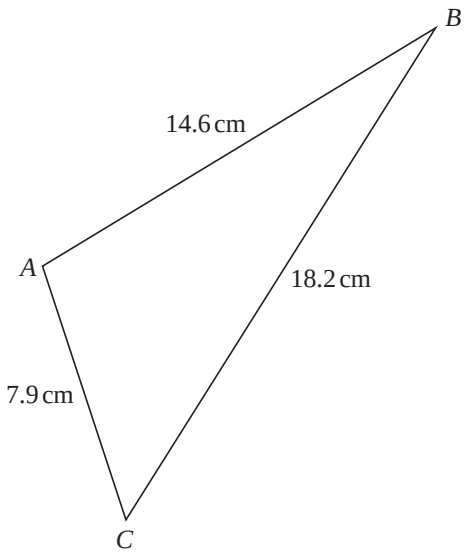
..... cm^2

Source: Pearson Edexcel GCSE Mathematics, Nov 2024, 1MA1/3H, Question 13.

Question 22

Calculator allowed • 4 marks

Here is triangle *ABC*.



Work out the area of triangle *ABC*.
Give your answer correct to 3 significant figures.

cm^2

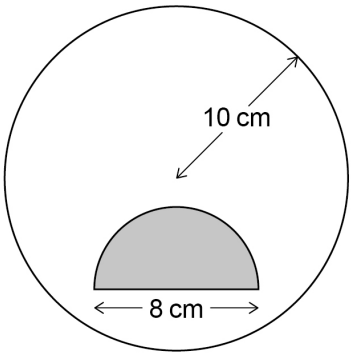
Source: Pearson Edexcel GCSE Mathematics, Nov 2024, 1MA1/3H, Question 17.

Question 23

Non-calculator • 4 marks

A shaded semicircle is inside a circle as shown.

Not drawn accurately



The **radius** of the circle is 10 cm

The **diameter** of the semicircle is 8 cm

How many times bigger is the unshaded area than the shaded area?

[4 marks]

Answer _____

Source: AQA GCSE Mathematics, June 2019, 8300/1H, Question 9.

Question 24

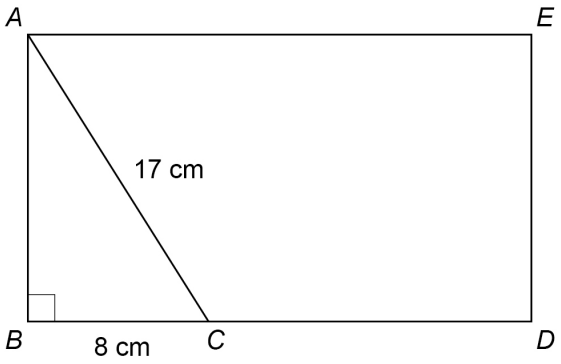
Calculator allowed • 4 marks

The diagram shows rectangle *ABDE* and right-angled triangle *ABC*.

AC = 17 cm

BC = 8 cm

Not drawn accurately



BC : *CD* = 1 : 2

Work out the area of rectangle *ABDE*.

[4 marks]

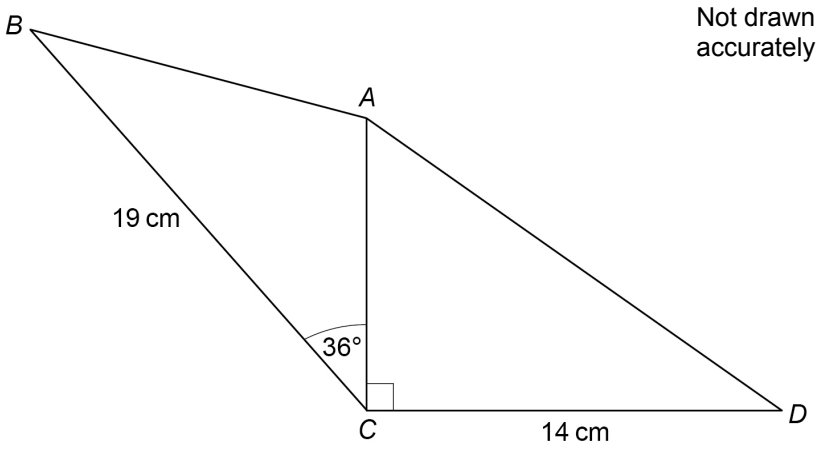
Answer _____ cm^2

Source: AQA GCSE Mathematics, June 2019, 8300/2H, Question 7.

Question 25

Calculator allowed • 4 marks

ABC and *ACD* are triangles.



Not drawn accurately

The area of *ACD* is 80.5 cm^2

Work out the area of *ABC*.

Give your answer to 3 significant figures.

[4 marks]

Answer _____ cm^2

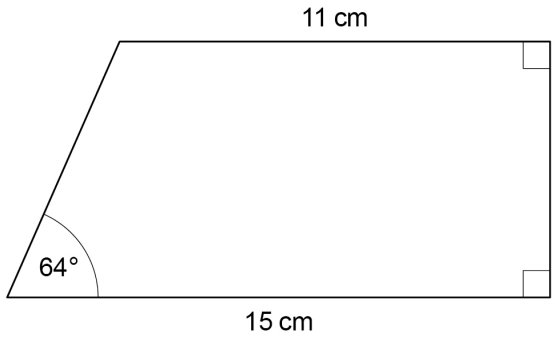
Source: AQA GCSE Mathematics, June 2019, 8300/2H, Question 16.

Question 26

Calculator allowed • 4 marks

Work out the area of the trapezium.

Not drawn accurately



[4 marks]

Answer _____ cm^2

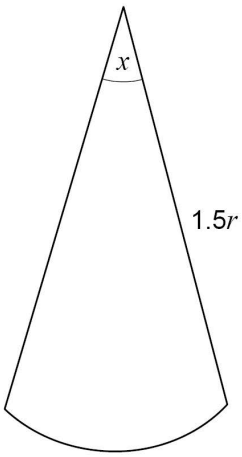
Source: AQA GCSE Mathematics, June 2019, 8300/2H, Question 19.

Question 27

Calculator allowed • 2 marks

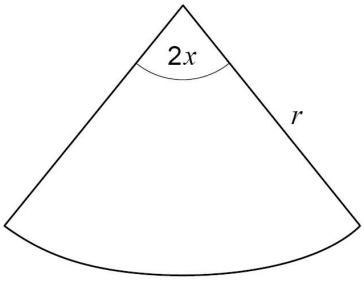
Here are two sectors from different circles.

Sector A



Sector B

Not drawn accurately



Which sector has the bigger area?

Tick a box.

☐ Sector A ☐ Sector B

Show working to support your answer.

[2 marks]

Source: AQA GCSE Mathematics, June 2019, 8300/3H, Question 16.

Sources and coverage

27 Higher Tier questions, totalling 103 marks. Questions 1–5 retain the numbering of the earlier batch. Questions 6–27 add 22 distinct questions. No Foundation questions were needed for this set.

Each selected question and diagram was inspected, and each worked solution was checked against its corresponding official mark scheme. Question wording and diagrams are extracted from the original papers; QLS supplies the new numbering, presentation and worked explanations.

Source search for this set: Edexcel Higher Papers 1, 2 and 3 from June and November 2022, 2023 and 2024; AQA Higher Papers 1, 2 and 3 from June 2019. The references under the questions identify the exact sources used.

This is a completed 27-question practice set, not a claim of exhaustive coverage of every accessible paper. Older Edexcel sessions and other AQA sessions remain outside this set’s checked question coverage. An OCR folder was not located in the search.

Topic 45 is Areas and Perimeters in the supplied 71-topic syllabus. Some questions also require algebra, similarity, Pythagoras, trigonometry or proof. Surface-area and volume questions, pressure questions, and area-under-graph questions have been excluded because their principal skills belong elsewhere.

Examination questions and diagrams remain the work of Pearson Education Ltd and AQA. QLS branding identifies the teaching compilation, not authorship of the examination questions. Use the matching worked-answer paper with this exact numbering.